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Subject: Bark Beetle Activity on the Alpine RD (alpinerd)

To: District Ranger, Alpine RD, Apache-Sitgreaves NFs

Monica Boehning requested the Arizona Zone Forest Health Protection (FHP) staff assess developed recreation sites for bark beetle activity on the Alpine RD. I evaluated bark beetle activity in the Alpine vicinity and developed recreation sites on the Alpine RD on the September 12th and 13th 2006. I describe in this report what bark beetle activity was observed in these recreation sites. Descriptions of bark beetle biology and actions to prevent and suppress bark beetle impacts were described in an earlier report sent to the Alpine RD on September 4, 2002.

Bark beetle activity in developed recreation sites on the Alpine RD

Twelve developed recreation sites on the Alpine RD were surveyed for bark beetle activity (**Table 1**). My survey consisted of walkthroughs looking for fading trees, pitch tubes, and boring dust. Relatively low levels of bark beetle activity were found at all recreation sites across the District. The most current beetle activity in terms of total trees killed was observed at Alpine Divide and the Horse Springs Campgrounds (CG's). The smaller infested pine had evidence of pine engraver beetle and larger trees were attacked by a combination of pine engraver beetle, roundheaded pine beetle and western pine beetle.

At the remaining recreation sites located in ponderosa pine and/or mixed conifer zones, the campgrounds higher in elevation had a combination of roundheaded pine beetle and Douglas-fir beetle activity, while lower elevation campgrounds had primarily roundheaded pine beetle and/or pine engraver beetle activity. Trees attacked by roundheaded pine beetle showed a characteristic bottom up fading pattern compared to pine engraver beetle-attacked trees that typically fade initially top down. Because of the 2004 Three Forks Fire, ongoing drought, and relatively dense stand conditions of mixed conifers, moderate levels of mixed conifer species (true fir and Douglas-fir) were observed in the vicinity of Diamond Rock CG and along Forest Service Road 249. At the highest elevation developed recreation site, KP Cienega, spruce beetle was active at relatively low levels (**Figure 1**).

It is important to note that a more intensive survey may find additional infested trees and additional trees may have become infested after my survey was completed. Therefore, the numbers of infested trees reported here should not be considered absolute.



Table 1. Summary of bark beetle activity in recreation sites on Alpine Ranger District, August 2004.

Recreation site	Previously infested pine	Current infested pine	Previously infested fir, spruce or Douglas-fir	Current infested fir, spruce or Douglas-fir
Luna Lake CG	3	2	0	0
Alpine Divide CG	12	5	0	0
Diamond Rock CG	0	0	12	0
Aspen CG	0	0	1	0
Deer Creek CG	0	1	5	0
Raccoon CG	0	1	0	0
Horse Springs/Porcupine CG	6	6	0	0
Horse Springs/Polecat CG	3	3	0	0
Buffalo Crossing CG	1	0	0	0
West Fork Black River CG	1	1	0	0
Hannagan CG	0	1	1	0
KP Cienega CG	0	0	*	1

* Several previously infested true fir and spruce trees were observed adjacent to KP Cienega CG.



Figure 1. Pitch tubes (left) and egg and larval galleries (right) caused by spruce beetle on Engelmann spruce attacked at KP Cienega Campground.

Recommendations

Because relatively low bark beetle activity was observed within the recreation sites surveyed, I do not recommend using preventative sprays for protecting high value trees at this time. However, based on the current stand conditions, trees within several of the campgrounds are susceptible to beetle attack now and will be in the future unless stand conditions change. In the short-term, prompt removal of currently infested trees will help to reduce the immediate local population of beetles. Trees at Deer Creek CG and Horse Springs CG that were currently infested by roundheaded pine beetle were typically found directly adjacent to trees infested the previous year. Similarly, the infested spruce tree at Kp Cienega CG, was adjacent to previously infested spruce. Therefore, prompt removal of these currently infested trees will likely help prevent future losses during the existing conditions of relatively low bark beetle activity. It is recommended that the infested trees be removed yet this fall or winter before the brood completes their development and adult beetles emerge. Felling of infested trees will not kill developing brood; infested trees must either be removed from the site or treated on site. Because these bark beetles are very common and widespread, removal of infested trees is not a guarantee of protection. Therefore, this approach is generally recommended in combination with the long-term silvicultural approach.

As indicated in ***Table 1***, there are many older dead trees in most of the recreation sites. These trees should be considered as potential hazards that could cause damage when they fall. A thorough inspection of these recreation sites for hazard trees is warranted. Our office can assist in training personnel to conduct hazard tree surveys.

If you have any questions regarding my assessment of current bark beetle activity within the recreation sites or my recommendations, please let me know. I can be reached at (928) 556-2074.

/s/ Joel D. McMillin

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